

## ABSTRACT

A semiconductor structure with electrically isolated sidewall electrodes on one or more sides of the structure and a method for fabricating the structure are disclosed. The electrically isolated sidewall electrodes are composed of silicon-based conductive material, e.g., doped polysilicon, which allows the electrodes to be formed on one or more sides of the semiconductor structure by using stop-on-oxide deep reactive-ion etching (DRIE). The electrically isolated sidewall electrodes allow the semiconductor structure to generate electrostatic forces between a side surface of the semiconductor structure and a side surface of a similar semiconductor structure. Thus, the semiconductor structure may be used as a part of an electrostatic actuator in a microelectromechanical system (MEMS) device.